

Robotics: Classroom Lesson Plan

Lesson Topic:

Robotics

Lesson Objective:

Students will be able to describe the field of robotics and use outside sources to answer even more of their robotics questions.

Materials:

- Chart paper, divided into three columns
- Writing utensils, at least two colors
- Books, magazines, and/or the internet for research purposes
- Projector or other method to watch the movie

Advanced Preparation:

- [Preview the video](#) before sharing it with your students [4:20].
- Divide chart paper into three equal columns, and title it "Robotics".

Warm-up Activity:

1. Tell students that they will be watching a video about robots and the field of robotics.
2. Allow students to turn and talk with a partner about what they already know about robotics.

3. Title the first column of the chart paper “What We Think We Know”. Ask students to share their knowledge from their partner discussion with the class. Make notes in the first column of the chart paper.
4. Introduce the **Vocabulary Word List** from the video. Have students circle the terms they are familiar with and look up the definitions of those they are not familiar with. Direct students to record their own definitions for the words they are familiar with and the dictionary definitions for those they are not.
5. For each term, have students work together to generate sentences or draw pictures that demonstrate their understanding of the vocabulary word in context (e.g., “It’s easy for me to study from anywhere; I’m very *mobile*.” or, “My grandmother has a hard time getting around her house, so she’s not very *mobile* anymore.” For students that choose to draw pictures, the word *mobile* may be represented by many things including a person moving or not moving around or a line drawn between two spots.).
6. Use this opportunity to clear up any misconceptions regarding word meanings as they relate to robotics.
7. Ask students to work with a partner to think of questions they have about robots or the field of robotics.
8. Title the second column of the chart paper “What We Want to Know”. Ask students to share their questions with the class. Make notes in the second column of the chart paper. Note that you’ll want at least 10 questions in this column.

View the Video: “Robotics”

1. Tell students they will be watching the video titled, “Robotics”.
2. Explain that the video presents role models discussing their careers in the field of robotics and ideas about robots in the future.

3. View the video together and have students listen for the role models to use the vocabulary words they just reviewed.
4. View the video again; this time, invite students to formulate questions or comments about the ideas discussed in the video and to be prepared to discuss these after viewing the video.

Video Follow-up:

1. Ask students to offer their questions, comments, reactions and responses to the video.
2. Review students' ideas and questions about robotics from the warm-up activity.
3. Title the third column of the chart paper "What We Learned".
4. Ask students to share things about robotics they learned from the video. Note these ideas in the third column of the chart paper.
5. If the answers to any of the questions from the second column were mentioned in the video, add those answers to the third column and place a checkmark next to the answered question in column two.
6. Tell students that although they learned many things from the video, the field of robotics is big and there is even more information available on the internet and in books and magazines.
7. Divide students into groups of 2–3. Ask each group to select at least two unanswered questions from the second column.
8. Allow students access to books, magazines, and/or the internet to search for the answers to their selected questions. Students should be prepared to share the answers to their selected questions with the class and can also be told to include the source of the answer if desired.



9. As students finish researching, bring the class back together so that students can share their answers (and sources, if desired). Using a different colored pen, make note of the answers in the third column of the chart paper. As each question from the second column is answered, check it off. Ideally, each question from the second column will have an associated answer.
10. Use the two colors of pen on the chart paper to point out that although we learned lots of interesting things about robotics from the video (first pen color), we also learned lots from other sources such as books, magazines, and the internet (second pen color).
11. Close by telling students that there is lots of career information about robotics and other careers available on the Career Girls website and from other sources. Encourage them to do further research outside of the classroom into careers that they feel might be interesting!

Extension Activities:

1. Use the “Related Questions to Explore” as discussion springboards or writing prompts to help students further explore the field of robotics.
2. Encourage students to research careers in the field of robotics. Students should compile a list of possible careers including information on job responsibilities, education requirements, salary ranges, and work environment.

Related Questions to Explore:

- How does the field of robotics currently help people? How might it help people in the future?
- What is a co-bot? In what way might people use co-bots? Why?
- Where can robots go that are difficult or dangerous for people to go? What do they do in these places?
- What types of jobs do women in the field of robotics have and what are their responsibilities? Which one sounds the most interesting to you? Why?
- Explain how social robots, like Jibo, might be used. What are the positives and negatives of using a social robot in these ways?



Vocabulary Word List from "Robots" Video:

Robotics

Algorithm

Artificial Intelligence

Drone

ROV (Remote Operated Vehicle)

Mobile

Niche



Ideas for Future Lessons/Activities Related to Robotics:

1. The Emotional Development of Robots: Why Might We Want Emotional Robots and How Are Women Working to Create Them?
2. What Would You Do? Challenging Ethical Scenarios in Robotics
3. Research Project: Learning About the Top Robotics Experts
4. Creating a Timeline of Robotics
5. Creative Writing Link: Robots of the Future
6. Investigating Social Robots: Who Are They and What Do They Do?
7. Are Robots Really Taking Our Jobs? A Look into Robots in the Workforce